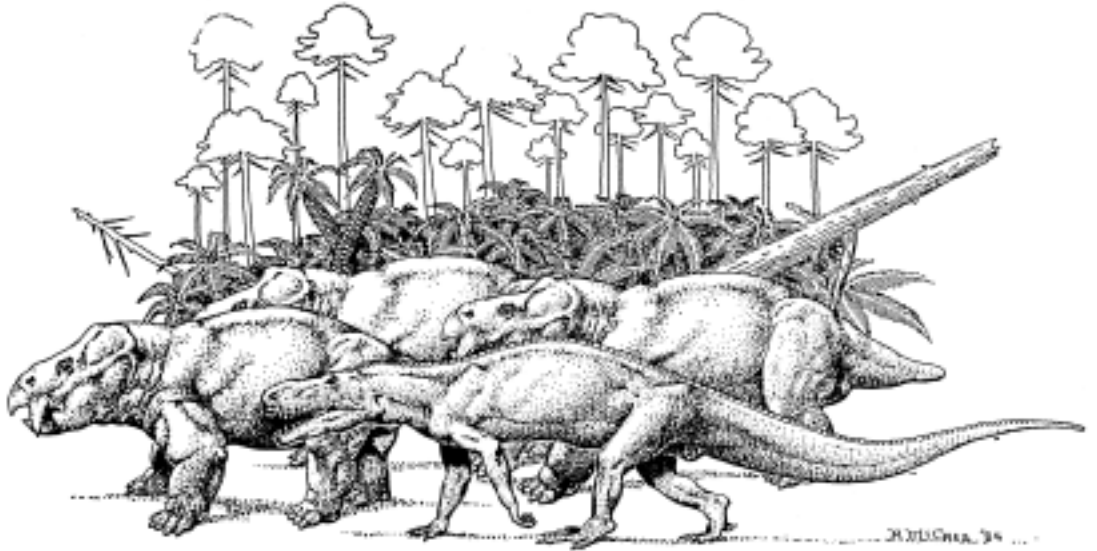




Dinosaurs, Giant Reptiles, and Other Triassic Animals



Fossils are clues to the past, allowing researchers to reconstruct ancient environments. During the Late Triassic, the climate was very different from that of today. Located near the equator, this region was humid and tropical, the landscape dominated by a huge river system. Giant reptiles and amphibians, early dinosaurs, fish, and many invertebrates lived among the dense vegetation and in the winding waterways. New fossils come to light as paleontologists continue to study the Triassic treasure trove of Petrified Forest National Park.

Rauisuchians



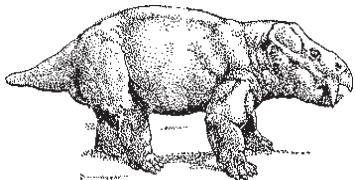
Rauisuchians (rau-i-su-key-ans) ranked as the top terrestrial predators of the Late Triassic, thanks to huge skulls armed with powerful biting jaws and 3 inch (7.6 cm) long serrated teeth. Species of rauisuchians found in the park include *Postosuchus kirkpatricki* and *Poposaurus gracilis*. Some rauisuchians could grow up to 20 feet (6 m) in length.

Phytosaurs



Phytosaurs (fie-toe-sores) were crocodile-like reptiles, some species reaching lengths up to 40 feet (12 m). Nostrils located strategically on top of the head just in front of the eyes allowed it to lurk in the water. Bony plates protected its body and jaws filled with sharp teeth made it a fearsome predator. Living in and near the water, phytosaurs had a diverse diet of fish, amphibians, and reptiles. Several species have been found in Petrified Forest National Park, including *Leptosuchus (Smilosuchus) gregorii* and *Pseudopelatus pristinus*.

Placerias

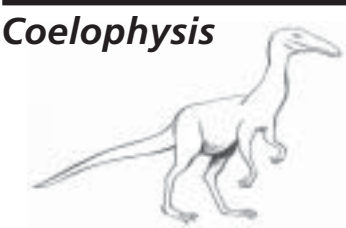


Placerias hesternus (pla-seer-ee-us) was a dicynodont therapsid. Therapsids were large reptiles that possessed many mammalian characters including a “cheek” bone, enlarged canine teeth, pelvis, and a specialized attachment of the skull to the spine. This massive plant-eater was up to 9 feet (2.7 m) long and might have weighed as much as two tons. *Placerias* had a short neck, barrel-shaped body, small tail, and a beak-like skull with large tusk-like bones protruding from its upper jaw. The beak-like jaws helped them pull up and tear tough plants and roots. While *Placerias* is represented in the park by isolated elements, it is common throughout Arizona, particularly near St. Johns, just southeast of the park. As many individual fossils have been found at the St. Johns’ site, it is thought that these animals may have lived in herds.

Aetosaurs



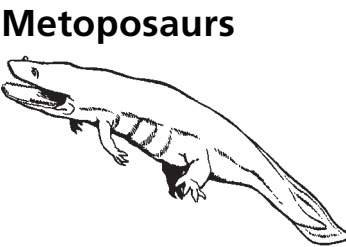
Aetosaurs (a-ee-toe-sores) were 10-15 foot (3-4.5 m) long reptiles with broad flat bodies protected by plate-like scutes. Some species had large spikes on their sides or back that were possibly used for defense. Aetosaurs had short limbs and small skulls with a pig-like snout for rooting in soil for plants and roots. *Desmatosuchus haplocerus* or *Stagonolepis wellsi* are two of the aetosaurs found in Petrified Forest National Park.



Coelophysis

Coelophysis (seal-o-fie-sis) was an early dinosaur. It was about 8 feet (2.4 m) long and could weigh 50 pounds (23 kg). The long slender jaws lined with sharp, flattened teeth indicate it was carnivorous. This agile animal probably walked on its hind limbs and used its forelimbs to catch and hold prey. Large eye sockets suggest keen eyesight. Fossil evidence indicates that it may have eaten its own kind.

Many visitors to the park are surprised to learn that dinosaurs are a relatively rare and minor component of the Triassic fossils preserved at the park.



Metoposaurs

Metoposaurs (meh-toe-poe-sores) were giant amphibians that grew to be 10 feet (3 m) long and weighed up to half a ton. They used their cavernous mouths to sieve water for small fish using sharp teeth to trap them. Like most amphibians, metoposaurs had lungs instead of gills and possibly detected vibrations in the water for hunting. Short weak legs indicate they spent most of their time in the water where they may have waited on the muddy bottom for prey. Two species have been found at Petrified Forest, *Buettneria perfecta* and *Apachesaurus gregorii*.



Fresh Water Sharks

Two types of sharks lived in the waters of the Petrified Forest area. *Lissodus humblei* was a blunt-toothed shark about 6-9 inches (15-23 cm) long. The blunt teeth indicate it survived on clams and clam shrimp and was probably a bottom dweller. “*Xenacanthus*” *moorei* (pictured) was a 3 foot (1 m) long prong-toothed shark that fed on smaller fish, aquatic reptiles, and amphibians. It had a slender body with large jaws that were lined with three pronged teeth.



Lungfish

Arganodus dorotheae were heavy, slow-moving fish up to 3 feet (1 m) in length and weighing up to 70 pounds (32 kg). They had fascinating, comb-shaped teeth used as crushing plates for clams. Some lungfish living today are able to leave the water for periods of time and breathe air. It is uncertain whether the lungfish of Petrified Forest National Park had this capability.



Coelacanth

Living species of coelacanths (seal -a- kanths) are still found in the world today. The fossil species found in Petrified Forest National Park is *Chinlea sorenseni*. This large fish could reach up to 5 feet (1.5 m) long and weigh up to 150 pounds (68 kg). Its jaws were equipped with large, sharp teeth for catching and holding prey. The slim tail and lobed fins enabled it to move quickly through the water.



Horseshoe crabs

Horseshoe crabs have been identified by their fossilized tracks (*Kouphichnium arizonae*), originally left in the soft sediments at the bottom of fresh water lakes and streams. These invertebrates probably ate worms, soft mollusks, plants, and dead fish.



Clams

Various fresh water bivalves have been found in the Chinle Formation, some species forming vast colonies in the muddy beds of the ancient lakes and rivers. *Antediplodon thomasi* is one of the clam fossils found in the park.



Protecting Our Legacy

Like pieces of a puzzle, fossils have long provided clues to the past. Paleontologists are reconstructing the Triassic ecosystem in Petrified Forest National Park by piecing together fossil records. The scientific and educational value of a fossil can only be interpreted when it is properly documented and studied. The displacement of a specimen from its surroundings reduces it to a mere curiosity. Help us by not disturbing any fossils you find during your visit. Report your fossil discoveries to any uniformed employee.

